U.S. Patent Application Serial No. 10/727,128

Listing of the Claims:

 (Original) A process for fortifying a fruit juice beverage with calcium, comprising: providing a supply of fruit juice as a flow of juice;

supply a calcium source into said flow of juice, said supplying being from an upstream in-line mixer along the flow of juice, whereby calcium is incorporated into the flow of juice to provide a calcium-augmented flow of juice;

supplying a food-grade acid source from a downstream in-line mixer along the flow of juice, the downstream mixer being spaced from the upstream in-line mixer, whereby acid is incorporated into the calcium-augmented flow of juice to form a calcium-fortified flow of juice having a component of calcium and acid; and

collecting the calcium-fortified flow of juice as a calcium-fortified fruit juice beverage.

- 2. (Previously Presented) The process in accordance with claim 1, wherein said calcium source is selected from the group consisting of calcium hydroxide, calcium carbonate, calcium citrate, calcium phosphate, calcium chloride, calcium malate and combinations thereof, and wherein said acid source is selected from the group consisting of malic acid, phosphoric acid, adipic acid, fumaric acid, benzoic acid, gluconic acid, lactic acid, and combinations thereof.
- (Original) The process in accordance with claim 1, wherein said calcium source is calcium hydroxide.
- 4. (Original) The process in accordance with claim 1, wherein said acid source is malic acid.
- 5. (Original) The process in accordance with claim 3, wherein said acid source is malic acid.
- (Original) The process in accordance with claim 1, wherein said acid source is phosphoric acid.
- (Original) The process in accordance with claim 1, wherein said acid source is a combination of malic acid and phosphoric acid.

and acid comprises calcium malate.

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(Original) The process in accordance with claim 1, wherein the component of calcium

 (Original) The process in accordance with claim 1, wherein said supplying of a calcium source and said supplying of an acid source occur at substantially the same time into the flow of

juice but at different locations along the flow of juice.

10. (Original) The process in accordance with claim 1, wherein said supplying of the acid

source is initiated along the flow of juice within five minutes after initiation of said supplying of

the calcium source along the flow of juice.

11. (Previously Presented) The process in accordance with claim 1, wherein during said

supplying of the acid source, citric acid is not introduced into the flow of juice.

12. (Previously Presented) The process in accordance with claim 2, wherein during said

supplying of the acid source, citric acid is not introduced into the flow of juice.

13. (Previously Presented) The process in accordance with claim 5, wherein during said

supplying of the acid source, citric acid is not introduced into the flow of juice.

14. (Original) The process in accordance with claim 2, wherein said supplying of the acid

source into the flow of juice results in the calcium-fortified juice beverage having between about

0.02 and about 0.25 weight percent of acid, based on the total weight of calcium-fortified

juice beverage.

15. (Original) The process in accordance with claim 2, wherein said supplying of the acid

source into the flow of juice results in the calcium-fortified juice beverage having between about

0.06 and about 0.8 weight percent of acid, based on the total weight of calcium-fortified

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juice beverage.

16. (Original) The process in accordance with claim 1, wherein said flow of juice is at a flow

rate of between about 150 and about 400 gallons per minute of juice.

17. (Original) The process in accordance with claim 1, wherein said supplying provides the

calcium source and said acid source at a weight ratio of between about 1:2.7 calcium to acid and

about 1:3.3 calcium to acid.

18. (Original) The process in accordance with claim 5, wherein said supplying provides the calcium source and said acid source at a weight ratio of between about 1:2.7 calcium to acid and

about 1:3.3 calcium to acid

19. (Original) The process in accordance with claim 1, wherein said supplying of the calcium

source and said supplying of the acid source each are accomplished under high-shear

mixing conditions.

(Original) A process for fortifying a not-from-concentrate (NFC) juice with calcium,

comprising:

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providing a supply of not-from-concentrate juice as a flow of NFC juice;

supplying a calcium source into said flow of NFC juice, said supplying being from an upstream in-line mixer along the flow of NFC juice, whereby calcium is incorporated into the

flow of NFC juice in order to provide a calcium-augmented flow of NFC juice;

supplying a food-grade acid source from a downstream in-line mixer along the flow of

juice, the downstream mixer being spaced from the upstream in-line mixer, whereby foodgrade acid is incorporated into the calcium-augmented flow of NFC juice to form a calcium-

fortified flow of NFC juice having a combination of calcium and malate; and

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collecting the calcium-fortified flow of juice as a calcium-fortified NFC juice.

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- 21. (Original) The process in accordance with claim 20, wherein said supplying of a calcium source and said supplying of an acid source occur at substantially the same time into the flow of juice but at different locations along the flow of juice.
- 22. (Original) The process in accordance with claim 20, wherein said supplying of an acid source is initiated along the flow of juice within five minutes after initiation of said supplying of the calcium source along the flow of juice.
- 23. (Previously Presented) The process in accordance with claim 20, wherein during said supplying of the acid source, citric acid is not introduced into the flow of juice.
- 24. (Original) The process in accordance with claim 20, wherein said supplying of the calcium source into the flow of juice results in the calcium-fortified juice beverage having between about 0.02 and about 0.25 weight percent of calcium, based on the total weight of calcium-fortified juice beverage; wherein said supplying of the acid source into the flow of juice results in the calcium-fortified juice beverage having between about 0.06 and about 0.8 weight percent of acid, based on the total weight of calcium-fortified juice beverage; and wherein said flow of NFC citrus juice is at a flow rate of between about 150 and about 400 gallons per minute of juice.
- (Original) A process for fortifying a not-from-concentrate (NFC) citrus juice with calcium, comprising:

providing a supply of not-from-concentrate citrus juice as a flow of NFC citrus juice;

supplying a calcium source into said flow of NFC citrus juice, said supplying being from an upstream in-line mixer along the flow of NFC citrus juice, whereby calcium is incorporated into the flow of NFC citrus juice under high-shear mixing conditions in order to provide a calcium-augmented flow of citrus juice;

supplying a source of organic acid selected from a malic acid source, a phosphoric acid source, and combinations of said sources from a downstream in-line mixer along the flow of

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citrus juice, the downstream mixer being spaced from the upstream in-line mixer, whereby the

source of organic acid is incorporated into the calcium-augmented flow of citrus juice under highshear mixing to form a calcium-fortified flow of citrus juice having a combination of calcium and

malate, calcium and phosphate, calcium malate phosphate, or both calcium malate and calcium

phosphate;

collecting the calcium-fortified flow of citrus juice as a calcium-fortified NFC citrus

juice; and

wherein said supplying of a calcium source and said supplying of an acid source occur

at substantially the same time into the flow of juice but at different locations along the flow of

juice.

26. (Original) The process in accordance with claim 25, wherein said supplying of the

acid source is initiated along the flow of juice within five minutes after initiation of said

supplying of the calcium source along the flow of juice.

27. (Previously Presented) The process in accordance with claim 25, wherein during

said supplying of the acid, source, citric acid is not introduced into the flow of juice.

28. (Original) The process in accordance with claim 25, wherein said supplying of the

calcium source of juice results in the calcium-fortified juice beverage having between about 0.02

and about 0.25 weight percent of calcium, based on the total weight fortified juice

beverage; and wherein said supplying of the acid source the flow of juice results in the calcium-

fortified juice beverage having between about 0.06 and about 0.8 weight percent of acid, based on

the total weight of calcium-fortified juice beverage.

29-47 (Cancelled).

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